

Permit

Environmental Protection Act 1994

Environmental authority EPML00881213

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EPML00881213

Environmental authority takes effect on 31 July 2023

Environmental authority holder(s)

Name(s)	Registered address
MINERAL PROJECTS PTY LTD	Level 15, 300 Queen Street Brisbane
TABLELAND RESOURCES PTY LTD	

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 17: Mining copper ore	ML2834, ML2833, ML2810, ML2831, ML2832, ML2811

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days) that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

- a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority – on the nominated day; or
- b) if the authority states a day or an event for it to take effect – on the stated day or when the stated event happens; or
- c) otherwise – on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Planning Act 2016* or an SDA Approval under the *State Development and Public Works Organisation Act 1971*), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

The anniversary day of this environmental authority is the same day each year as the effective date. The payment of the annual fee will be due each year on this day. An annual return will be due each year on 01 April.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

K Treloar

Signature

31 July 2023

Date

Kirstie Treloar
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
Minerals Business Centre
Department of Environment and Science
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Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

Schedules of Conditions

This **environmental authority** consists of the following schedules of conditions:

Schedule	Issue
A	General
B	Air and Noise
C	Water
D	Land and Rehabilitation
E	Structures
F	Definitions
G	Figures

Schedule A – General

Activity

- A1 This environmental authority authorises environmental harm referred to in the conditions. Where there is no condition or this environmental authority is silent on a matter, the lack of a condition or silence does not authorise environmental harm.
- A2 In carrying out the mining activity authorised by this environmental authority, the holder of this environmental authority must comply with Schedule A — Table 1 (Project Infrastructure Layout—Mine Area) and Schedule G — Figure 1 (Mine Infrastructure Layout)¹.

Schedule A – Table 1 (Project Infrastructure Layout – Mine Area)

Mine Feature Name	Disturbance Area (ha)	Co-ordinates GDA 94 MCA Zone 55	
		Easting	Northing
Pit and Portal	0.57	234468	8218660
		234461	8218674
		234491	8218748
		234512	8218697
Run of Mine ROM and mill site	0.35	234435	8218642
		234420	8218657
		234447	8218681
		234460	8218667
General re-profiled area	2.45	As Indicated on Schedule G: Figure 1 – Mine Infrastructure Layout	
Waste rock stockpile (current location)	0.71	234359	8218307
		234326	8218355
		234444	8218443
		234477	8218397
Settling Dam	0.93	234138	8218216
		234116	8218248
		234262	8218302
		234268	8218268
Raw Water Dam 1	7.2	235052	8217970
		234952	8218217
		235244	8218213
		235249	8218061
Raw Water Dam 2	0.69	234639	8218522
		234559	8218583
		234617	8218609
		234676	8218559
Roads and Tracks	0.3	As Indicated on Schedule G: Figure 1 – Mine Infrastructure Layout	

Maintenance of Measures, Plant and Equipment

- A3 The holder of this environmental authority must:

- a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this environmental authority;
- b) maintain such measures, plant and equipment in a proper and efficient condition;
- c) operate such measures, plant and equipment in a proper and efficient manner;
- d) ensure all instruments and devices used for the measurement or monitoring of any parameter under any condition of this environmental authority are properly calibrated.

Monitoring

- A4 Except where specified otherwise in another condition of this authority, all monitoring records, reports and other site data generated as a requirement of this authority must be kept for a period of not less than 5 years.
- A5 An environmental monitoring program sufficient to demonstrate compliance with the conditions of this environmental authority must be developed by an appropriately qualified person and implemented by 1 February 2014.
- A6 All analysis and tests required to be conducted under this environmental authority must be carried out by an appropriately qualified person and analysed by a laboratory that has NATA accreditation for such analysis and tests, except as otherwise authorised by the Administering Authority.
- A7 Monitoring and analysis required by this environmental authority must be undertaken in accordance with the requirements of the administering authority's latest guidelines, unless otherwise agreed by the administering authority in writing.

Risk Management

- A8 The holder of this environmental authority must develop and implement a risk management system for mining activities which mirrors the content requirement of the Standard for Risk Management (ISO31000:2009), or the latest edition of an Australian Standard for Risk Management, to the extent relevant to environmental management, by 1 May 2014.

Notification of Emergencies, Incidents and Exceptions

- A9 The holder of this environmental authority must notify the administering authority by written notification within 24 hours, after becoming aware of any emergency or incident which results in the release of contaminants not in accordance, or reasonably expected to be not in accordance with the conditions of this environmental authority.
- A10 Within 10 business days following the initial notification of an emergency or incident, or receipt of monitoring results, whichever is the latter, further written advice must be provided to the administering authority, and must include, but not necessarily be limited to the following:
- a) results and interpretation of any samples taken and analysed;

- b) outcomes of actions taken at the time to prevent or minimise unlawful environmental harm;
- c) proposed actions to prevent a recurrence of the emergency or incident.

Complaints

- A11 The holder of this environmental authority must record all environmental complaints received about the mining activities including:
- a) name, address and contact number for of the complainant;
 - b) time and date of complaint;
 - c) reasons for the complaint;
 - d) investigations undertaken;
 - e) conclusions formed;
 - f) actions taken to resolve the complaint;
 - g) any abatement measures implemented;
 - h) person responsible for resolving the complaint.
- A12 The holder of this environmental authority must, when requested by the administering authority, undertake relevant specified monitoring within a reasonable timeframe nominated or agreed to by the administering authority to investigate any complaint of environmental harm. The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures, where implemented, must be provided to the administering authority within 10 business days of completion of the investigation, or no later than 10 business days after the end of the timeframe nominated by the administering authority to undertake the investigation.

Third-Party Reporting

- A13 The holder of this environmental authority must:
- a) within 1 year of the commencement of this authority, obtain from an appropriately qualified person, a report on compliance with the conditions of this environmental authority;
 - b) obtain further such reports at regular intervals not exceeding 3 years from the completion of the report referred to above;
 - c) provide each report to the administering authority within 90 days of its completion.

Amendments to Standards, Policies or Guidelines

- A14 Where a condition of this environmental authority requires compliance with a standard, policy or guideline published externally to this environmental authority and the standard is amended or changed subsequent to the issue of this environmental authority the holder of this environmental authority must:
- a) comply with the amended or changed standard, policy or guideline within 2 years of the amendment or change being made, unless a different period is specified in the amended standard or relevant legislation, or where the amendment or change

relates specifically to regulated structures referred to in Schedule E - Structures, the time specified in that schedule;

- b) until compliance with the amended or changed standard, policy or guideline is achieved, continue to remain in compliance with the corresponding provision that was current immediately prior to the relevant amendment or change.

Investigation

A15 If monitoring results indicate an exceedance of any quality objectives specified in a condition of this environmental authority, the holder of this environmental authority must notify the administering authority in accordance with condition AI 1 and:

- a) complete an investigation to identify the potential cause of the exceedance;
- b) if the investigation demonstrates that the exceedance is not attributable to the mining activities, then no further action is required; or
- c) if the cause of the exceedance is inconclusive or attributable to the mining activities, provide a written report to the administering authority within 3 months of the date of receiving the monitoring results showing an exceedance, outlining:
 - (i) all pertinent details of the investigation carried out; and
 - (ii) actions taken or planned to minimise environmental harm.

Exploration

A16 All exploration activities carried out on the mining leases must comply with each of the Standard Environmental Conditions contained in the *"Eligibility criteria and standard conditions for exploration and mineral development projects"* (ESR/2016/1985).

END OF CONDITIONS FOR SCHEDULE A

Schedule B — Air and Noise**General**

- B1 Unless authorised by this environmental authority, the release of noxious or offensive odour, dust or any other airborne contaminant resulting from the mining activity must not cause environmental harm beyond the boundary of the licensed place.
- B2 The holder of this environmental authority must ensure that noise and vibration generated by the mining activity does not cause environmental harm beyond the boundary of the licensed place.

END OF CONDITIONS FOR SCHEDULE B

Schedule C — Water

Contaminant Release to Waters

C1 The release of contaminants to waters must:

- a) only occur during flow events in the receiving waters;
- b) only occur from the release point specified in Schedule C — Table 1 (Release Point Location).
- c) be monitored at the release point and at the monitoring frequency specified in Schedule C — Table 1 (Release Point Location) for the total daily volume of water released and for each parameter specified in Schedule C — Table 2 (Release Quality Objectives).

Schedule C - Table 1 (Release Point Location)

Release Point	Description of Release	Description of Source	Description of Receiving Waters	Co-ordinates GDA 94 MGA Zone 55		Monitoring Frequency
				Easting	Northing	
RPI	Settling Dam spillway	Drainage from mine catchment exiting via Settling Dam spillway	Drainage line originating at Raw Water Dam 1, passing the confluence of the Settling Dam spillway drainage line and reporting to Gum Creek	234159	8218214	For all parameters, 1 sample must be taken within 12 hours of a release event commencing and for events with duration of greater than 24 hours, samples must be taken daily for 1 week and once a week thereafter until the event

C2 At the time of release from the authorised release point specified in Schedule C — Table 1 (Release Point Location) the water flow (m³/hour) in the respective receiving water must be at least 20 times the water flow (m³/hour) at which respective contaminated waters are released from RPI.

Release Event Flow Monitoring

C3 For any release of contaminants to receiving waters, the environmental authority holder must:

- a) record the date and time for both the commencement and cessation of the release event; and
- b) determine and record the total daily volume of contaminated waters released; and
- c) determine and record receiving waters background flow (m³/hour) at the monitoring point FMP specified in Schedule C - Table 4 (Receiving Waters Monitoring Locations) for the duration of the release event; and

- d) if requested by the administering authority, provide this information to the administering authority within 24 hours of any request.

C4 End of pipe quality objectives for water contaminated by mining activities when monitored at the location defined in Schedule C — Table 1 (Release Point Location) must not exceed the release quality objectives specified In Schedule C — Table 2 (Release Quality Objectives).

Schedule C - Table 2 (Release Quality Objectives)

Parameter ¹	Water Quality Objective Concentration (mg/L unless otherwise stated) ⁶
pH (pH units)	Lower limit - 6.0 or 20 th percentile of the reference site concentration, whichever is lower. Upper Limit - 8.0 or 80 th percentile of the reference site concentration, whichever is higher.
EC (µs/cm)	2500 ² or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher.
Dissolved Oxygen	For interpretational purposes only
Total Suspended Solids	20 times the 80 th percentile of reference site concentration ⁴
Sulfate	15400 ⁷ or 20 times the 80 th percentile of reference site Concentration ⁴ , whichever is higher
Fluoride	20 times the 80 th percentile of reference site concentration ⁴
Major cations (mg/L)	For interpretive purposes
Major anions (mg/L)	For interpretive purposes
Aluminium	1.1 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Arsenic ⁵	0.26 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Boron	7.4 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Cadmium	0.004 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Chromium ⁵	0.02 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Copper	0.028 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Lead	0.068 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Manganese	38 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Mercury (inorganic)	0.0012 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Nickel	0.22 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Selenium (Total)	0.1 ⁴ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher

Silver	0.001 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Zinc	0.16 ³ or 20 times the 80 th percentile of reference site concentration ⁴ , whichever is higher
Total petroleum hydrocarbons	No detectable film or odour

1. For water quality objectives parameters, all metals and metalloids must be measured and reported as both total (unfiltered) and dissolved (field filtered) levels.
2. Twenty times higher than values derived from QWQG (2009) appendix G — Salinity guidelines for Queensland freshwaters.
3. Twenty times higher than ANZECC (2000) table 3.4.1 - Trigger values for toxicants at alternate levels of protection. Values are the trigger values applying to typical slightly-moderately disturbed systems.
4. Values derived from reference sites listed in Schedule C — Table 4 (Receiving waters monitoring locations) and in accordance with QWQG (2009) methodology.
5. Routine analysis for this parameter is based on combined/total species of the element, where the exceedance of the WQO is identified, an additional sample must be taken and analysed as soon as practicable to determine and quantify speciated forms of this element. This does not apply to sediment analysis.
6. Water quality objective concentrations for all metals refers to dissolved (field filtered) concentrations.
7. Twenty times higher than values derived from Dunlop, J et.al. (November 2011) Development of Ecosystem Protection Trigger Values for Sodium Sulfate in the Seasonally Flowing Streams of the Fitzroy River Basin. ACARP Project C18033 (95% species protection levels).

C5 Water Quality Objectives and Sediment Quality Objectives specified in Schedule C - Table 3 (Receiving Waters and Sediment Quality Objectives) must not be exceeded when measured at the monitoring points as specified in Schedule C - Table 4 (Receiving Waters Monitoring Locations).

Schedule C – Table 3 (Receiving Waters and Sediment Quality Objectives)

Parameter ¹	Water Quality Objective ⁶ (limit unless otherwise specified)	Sediment Quality Objective ⁷ (limit unless otherwise specified)
pH (pH units with an acceptable range)	6.0 to 8.0 ⁴	Not applicable
Electrical conductivity	125 ⁷ µs/cm or 80 th percentile ⁹ of reference site concentration ¹⁰	Not applicable
Dissolved oxygen (mg/L)	For interpretive purposes only	Not applicable
Total suspended solids (mg/L)	80 th percentile ⁹ of reference site concentration ¹⁰	Not applicable
Sulphate	770 ¹¹ or 80 th percentile ⁹ of reference site concentration ¹⁰	3 times the reference site concentration ¹⁰
Fluoride	80 th percentile ⁹ of reference site concentration ¹⁰	3 times the reference site concentration ¹⁰
Major cations (mg/L)	For interpretive purposes	Not applicable
Major anions (mg/L)	For interpretive purposes	Not applicable
Aluminium	0.055 or 80 percentile of reference site concentration, whichever is higher	3 times the reference site concentration ¹⁰
Antimony	Not applicable	
Arsenic ⁸	0.013 ³ or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	70 ⁵ or 3 times the reference site concentration ¹⁰ , whichever is higher

Boron	0.37 ³ or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	3 times the reference site concentration ¹⁰
Cadmium	0.0002 ³ or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	10 ⁵ or 3 times the reference site concentration ¹⁰ , whichever is higher
Chromium ⁸	0.001 ³ or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	370 ⁵ or 3 times the reference site concentration ¹⁰ , whichever is higher
Copper	0.0014 ³ or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	270 ⁵ or 3 times the reference site concentration ¹⁰ , whichever is higher
Lead	0.0034 ³ or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	220 ⁵ or 3 times the reference site concentration ¹⁰ , whichever is higher
Manganese	1.9 ³ or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	3 times the reference site concentration ¹⁰
Mercury (inorganic)	0.00006 ³ or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	1 ⁵ or 3 times the reference site concentration ¹⁰ , whichever is higher
Nickel	0.011 ³ or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	52 ⁵ or 3 times the reference site concentration ¹⁰ , whichever is higher
Selenium (Total)	0.005 ³ or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	3 times the reference site concentration ¹⁰
Silver	0.000053 or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	3.7 ⁵ or 3 times the reference site concentration ¹⁰ , whichever is higher
Zinc	0.0083 or 80 th percentile ⁹ of reference site concentration ¹⁰ , whichever is higher	410 ⁵ or 3 times the reference site concentration ¹⁰ , whichever is higher
Total Hardness (mg/L)	For interpretive purposes only	Not applicable
Total Organic Carbon	Not applicable	For interpretive purposes only
Total petroleum hydrocarbons	No detectable film or odour	Not applicable

- For water quality objectives parameters, all metals and metalloids must be measured and reported as both total (unfiltered) and dissolved (field filtered) levels.
- All stream sediment sampling must be undertaken in accordance with the most recent edition of AS 5667.12 Guidance on Sampling of Bottom Sediments.
- ANZECC (2000) table 3.4.1 - Trigger values for toxicants at alternate levels of protection. Values are the trigger values applying to typical slightly-moderately disturbed systems.
- Values derived from ANZECC (2000) table 3.3.4 — Default trigger values for physical and chemical stressors for tropical Australia for slightly disturbed ecosystems. Values are the trigger values for upland rivers.
- Values derived from ANZECC (2000) table 3.5.1 — Recommended sediment quality guidelines. Values are the trigger values (ISQGH).
- Water quality objective limits for all metals refers to dissolved (field filtered) concentrations.
- Values derived from QWQG (2009) appendix G — Salinity guidelines for Queensland freshwaters. Value is the proposed preliminary guideline value (75th percentile).

8. Routine analysis for this parameter is based on combined/total species of the element, where the exceedance of the WQO is identified, an additional sample must be taken and analysed as soon as practicable to determine and quantify speciated forms of this element. This does not apply to sediment analysis.
9. Must be determined in accordance with QWQG (2009) methodology.
10. Reference sites are specified in Schedule C — Table 4 (Receiving waters monitoring locations).
11. Values derived from Dunlop, J et.al. (November 2011) Development of Ecosystem Protection Trigger Values for Sodium Sulfate in the Seasonally Flowing Streams of the Fitzroy River Basin. ACARP Project C18033 (95% species protection levels).

Receiving Environment Monitoring Program (REMP)

C6 The environmental authority holder must develop and implement, by 1 February 2014, Receiving Environment Monitoring Program (REMP) sufficient to monitor, identify and describe any adverse impacts to surface water environmental values, quality and flows due to the authorised mining activity.

For the purposes of the REMP, the receiving environment is waters of the drainage lines downstream of the Raw Water Dam 1 and Settling Dam as specified in Schedule A — Table 1 (Project Infrastructure Layout — Mine Area), and Gum Creek and connected or surrounding waterways. At minimum, the REMP must include:

- a) monitoring of all parameters specified in Schedule C - Table 3 (Receiving Waters and Sediment Quality Objectives) at all locations specified in Schedule C - Table 4 (Receiving Waters Monitoring Locations) and at the following minimum frequency:
 - i. For sediment quality objectives, biannually between 1 September and 1 November and also between 1 April and 1 May; and
 - ii. For water quality objectives of receiving waters during any release event or flow event in receiving waters, one sample must be taken within 12 hours of the event commencing. Where release or flow events have duration of greater than 24 hours, samples must be taken daily for 1 week and once a week thereafter until the release or flow event ceases.
- b) monitoring of suitable biological indicators of aquatic ecosystem health.

Schedule C - Table 4 (Receiving Waters Monitoring Locations)

Monitoring Point	Description	Co-ordinates GDA 94 MGA Zone 55	
		Easting	Northing
Receiving Water Sites			
MP 1	Monitoring point 1 - mining lease boundary	TBA ¹	TBA ¹
MP 2	Monitoring point 2 - Within 500m downstream of the confluence of the receiving water and Gum Creek	TBA ¹	TBA ¹
FMP ²	Flow monitoring point - immediately upstream of the confluence of the Catch Dam spillway drainage line and the Raw Water Dam 1 drainage line.	TBA ¹	TBA ¹
Reference Sites ²			

RF1	TBA ¹	TBA ¹	TBA ¹
RF2	TBA ¹	TBA ¹	TBA ¹
RF3	TBA ¹	TBA ¹	TBA ¹

1. TBA means to be provided to the administering authority by 3 January 2014. Must be determined in accordance with QWQG (2009) methodology.
2. Monitoring of parameters specified in Schedule C — Table 3 (Receiving Waters and Sediment Quality Objectives) is not required at this monitoring point.

- C7 A REMP Design Document that addresses the requirements of the REMP must be prepared and made available to the administering authority by 1 February 2014.
- C8 A report outlining the findings of the REMP, including all monitoring results and interpretations must be prepared annually, by 1 July, and made available on request to the administering authority, this must include an assessment of background reference water quality, the condition of downstream water quality compared against water quality objectives, and the suitability of current discharge limits to protect downstream environmental values.

Groundwater

- C9 The holder of this environmental authority must not release contaminants to groundwater.
- C10 A Groundwater Monitoring Program must be developed by an appropriately qualified person and implemented by 1 May 2014. The Groundwater Monitoring Program must include adequate information and data to allow the administering authority to make an assessment of compliance with Condition C9.

Water Management Plan

- C11 A Water Management Plan must be developed by an appropriately qualified person, in accordance with the administering authority's guideline "Preparation of Water Management Plans for Mining Activities", and implemented at the licensed place by 1 November 2013. The Water Management Plan must be reviewed annually, by 1 September, to assess the adequacy of the plan, ensure actual and potential environmental impacts are managed, and identify any necessary amendments to the plan to ensure compliance with this environmental authority.

Erosion and Sediment Control

- C12 An Erosion and Sediment Control Plan must be developed by an appropriately qualified person and implemented at the licensed place before 1 December 2013, to minimise erosion, contamination of stormwater and the release of sediment to receiving waters.

END OF CONDITIONS FOR SCHEDULE C

Schedule D — Land and Rehabilitation

Release of Contaminants

- D1 Unless authorised by this environmental authority, contaminants that will or may cause environmental harm must not be directly or indirectly released to land.

Waste

- D2 All general and regulated waste other than authorised under condition D3 must be removed from the licensed place to a facility that is lawfully able to accept the waste.
- D3 The only waste that can be disposed at the licensed place is waste generated at the licensed place, and is limited to waste rock.

Contaminated Land

- D4 Before applying for surrender of a mining lease, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the mining lease which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.
- D5 Before applying for progressive rehabilitation certification for an area, the holder must (if applicable) provide to the administering authority a site investigation report under the Act, in relation to any part of the area the subject of the application which has been used for notifiable activities or which the holder is aware is likely to be contaminated land, and also carry out any further work that is required as a result of that report to ensure that the land is suitable for its final land use.

Waste Rock Management Plan

- D6 A Waste Rock Management Plan must be developed and certified by an appropriately qualified person and implemented by 1 February 2014. The Waste Rock Management Plan must be reviewed annually to assess the adequacy of the plan, ensure actual and potential environmental impacts are managed, and identify any necessary amendments to the plan to ensure compliance with this environmental authority. The Waste Rock Management Plan must include, but not necessarily be limited to, the following:
- a) A detailed design of any waste rock dump(s) to be constructed; and
 - b) A detailed site plan showing the location of existing and planned waste rock dumps, including drainage features; and

- c) An Action Plan for the management of the existing waste rock dump, as identified in Schedule A — Table 1 (Project Infrastructure Layout — Mine Area). The Action Plan must include, but not necessarily be limited to, the following:
- i) timeframes and critical dates;
 - ii) details of relocation, capping or other control strategies that remove, minimise or mitigate the current environmental risk from mine drainage, including contingency plans;
 - iii) characterisation of the waste rock to allow conclusive determination of the chemistry of runoff and seepage generated;
 - iv) a materials balance and disposal plan demonstrating how waste rock will be managed to minimise the generation of acid, neutral and/or saline mine drainage;
 - v) a sampling program to verify the management of potentially acid forming rock and acid forming rock and waste rock that has a potential to generate neutral mine drainage;

D7 The actions referred to in condition D6 - c), must be completed within the timeframes stated in the action plan, unless written agreement has been obtained from the administering authority.

Biodiversity

D8 Prior to commencement of vegetation clearing, the holder of this environmental authority must:

- a) engage an appropriately qualified person to undertake a comprehensive flora survey in accordance with the latest version of the administering authority's Guidelines for Flora Survey and Assessment in Northern Queensland; and
- b) provide a report, in accordance with the latest version of the administering authority's Guidelines for Flora Survey and Assessment in Northern Queensland, to the administering authority.

D9 If the report required by condition D8 indicates the presence of prescribed native wildlife and breeding places, an appropriately qualified spotter/catcher must be engaged to work ahead of vegetation clearing.

Note: This environmental authority does not authorise the taking of native wildlife or the tampering with a breeding place that is being used by prescribed native wildlife to incubate or rear the animal's offspring.

D10 In the event of identification of rare or threatened species on the licensed place, a diagrammatic representation of the species occurrence relative to the mining activity together with a management and monitoring strategy for species conservation must be prepared and implemented and submitted to the administering authority within 90 days of the event.

Biodiversity Offsets

D11 The holder of this environmental authority must provide an offset for impacts on applicable state significant biodiversity values, in accordance with Queensland Biodiversity Offset Policy. The

biodiversity offset must be consistent with the requirements for an offset as identified in the Biodiversity Offset Strategy (as per condition D12) and must be provided:

- a) prior to impacting on state significant biodiversity values; or
- b) where a land based offset is to be provided, within twelve (12) months of the later of either of the following:
 - i. the date of issue of this environmental authority; or
 - ii. the relevant stage identified in the Biodiversity Offset Strategy submitted under condition D12; or
- c) where an offset payment is to be provided, within four (4) months of the later of either of the following:
 - i. the date of issue of this environmental authority; or
 - ii. the relevant stage identified in the Biodiversity Offset Strategy submitted under condition D12.

D12 A Biodiversity Offset Strategy must be developed and submitted to the administering authority within either 30 days, or a lesser time period agreed to by the administering authority, prior to impacting on the applicable state significant biodiversity values.

END OF CONDITIONS FOR SCHEDULE D

Schedule E — Structures

Assessment of Hazard Category

- E0 A hazard assessment report and certification must be prepared for each structure classified as hazardous and must be provided to the administering authority before 1 November 2013. The hazard category of any structure on site must be assessed by a suitably qualified and experienced person in accordance with the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635).
- E1 The hazard category of any structure must be assessed by a suitably qualified and experienced person:
- a) in accordance with the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635); and
 - b) in any of the following situations:
 - i. prior to the design and construction of the structure; or
 - ii. prior to any change in its purpose or the nature of its stored contents; and
 - iii. in accordance with the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635).
- E2 A hazard assessment report and certification must be prepared for any structure assessed and the report may include a hazard assessment for more than one structure.
- E3 The holder must, on receipt of a hazard assessment report and certification, provide to the administering authority one paper copy and one electronic copy of the hazard assessment report and certification.
- E4 Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635).
- E5 The holder must take reasonable and practical measures so that each dam associated with the mining activity is designed, constructed, operated and maintained in accordance with accepted engineering standards and is fit for the purpose for which it is intended.

Design and Construction of a Regulated Structure

- E6 All regulated structures must be designed by, and constructed under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635).
- E7 Construction of a regulated structure is prohibited unless the holder has:
- a) submitted a hazard category assessment report and certification to the administering authority;
 - b) commissioned a suitably qualified and experienced person to prepare a design plan for the structure; and

- c) received the certification from a suitably qualified and experienced person for the design and design plan and the associated operating procedures in compliance with the relevant condition of this authority.

E8 Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan, in the form set out in the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635).

E9 Regulated structures must:

- a) be designed and constructed in accordance with and conform to the requirements of the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635);
- b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of:
 - i. floodwaters from entering the regulated dam from any watercourse or drainage line; and
 - ii. wall failure due to erosion by floodwaters arising from any watercourse or drainage line.

E10 The design plan for a regulated structure must include, but is not limited to:

- a) certification that the design plan:
 - i. is in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*, including subsidiary certifications if necessary; and
 - ii. addresses the requirements in E10(b) to i.
- b) A design report which provides:
 - i. a description of all the documents which constitute the design plan;
 - ii. a statement of:
 - a) the applicable standards including engineering criteria, industry guidelines, relevant legislation and regulatory documents, relied upon in preparing the design plan; and
 - b) all relevant facts and data used in preparing the design plan, including any efforts made to obtain necessary facts and data, and any limitations or assumptions to facts and data used in preparing the design plan;
 - c) the hazard category of the regulated structure; and
 - d) setting out the reasoning of the suitably qualified and experienced person who has certified the design plan, as to how the design plan provides the necessary required performance;
 - iii. documentation of hydrological analyses and estimates required to determine all elements of the design including volumes and flow capacities;
 - iv. detailed criteria for the design, operation, maintenance and decommissioning of the regulated structure, including any assumptions;
 - v. design, specification and operational rules for any related structures and systems used to prevent failure scenarios;

- c) Drawings showing the lines and dimensions, and locations of built structures and land forms associated with the regulated structure;
- d) Consideration of the interaction of the pit design with the levee or regulated dam design;
- f) An operational plan that includes:
 - i. normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA allowance);
 - ii. contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure;
- g) Details of reports on investigations and studies done in support of the design plan;
- h) Any other matter required by the suitably qualified and experienced person.

E11 Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that:

- a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure;
- b) construction of the regulated structure is in accordance with the design plan;

E12 Where a regulated dam is to be managed as part of an integrated containment system and the DSA volume is to be shared across the integrated containment system, the design and operating rules for the system as a whole must be documented in a system design plan that is certified by a suitably qualified and experienced person.

E13 The system design plan must contain:

- a) the design plans, and
- b) the 'as constructed' plans, and
- c) the operational rules for each individual regulated dam that forms part of the integrated system, and
- d) the standards of serviceability and accessibility of water transfer equipment or structures, and
- e) the operational rules for the system as a whole.

Operation of a regulated structure

E14 Operation of a regulated structure is prohibited unless:

- a) the holder has submitted to the administering authority:
 - i. one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition E10, and
 - ii. a set of 'as constructed' drawings and specifications, and
 - iii. certification of those 'as constructed drawings and specifications' in accordance with condition E10, and

- iv. where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan.
- b) the requirements of this authority relating to the construction of the regulated structure have been met; and
- d) relevant details for the dam have been included in Schedule E - Table 1 and Schedule E - Table 2 of this authority.

E15 Each regulated structure must be maintained and operated in a manner that is consistent with the current design plan, the current operational plan, and the associated certified 'as constructed' drawings for the duration of its operational life until decommissioned and rehabilitated.

E16 The holder must take reasonable and practicable control measures to prevent the causing of harm to persons, livestock or wildlife through the construction and operation of a regulated structure. Reasonable and practicable control measures may include, but are not limited to:

- a) the secure use of fencing, bunding or screening; and
- b) escape arrangements for trapped livestock and fauna.

Mandatory reporting level

E17 The Mandatory Reporting Level (the MRL) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.

E18 The holder must, as soon as practical and within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.

E19 The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.

Annual inspection report

E20 Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.

E21 At each annual inspection, the condition and adequacy of all components of the regulated structure must be assessed:

- a) against the most recent hazard assessment report and design plan (or system design plan);

- b) against recommendations contained in previous annual inspections reports;
- c) against recognised dam safety deficiency indicators;
- d) for changes in circumstances potentially leading to a change in hazard category;
- e) for conformance with the conditions of this authority;
- f) for conformance with the 'as constructed' drawings;
- g) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the dam (or network of linked containment systems);
- h) for evidence of conformance with the current operational plan.

- E22 A suitably qualified and experienced person must prepare an annual inspection report containing details of the assessment and including recommended actions to ensure the integrity of the regulated structure.
- E23 The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams (EM635)*.
- E24 The holder must:
- a) upon receipt of the annual inspection report, consider the report and its recommendations and take action to ensure that the regulated structure will safely perform its intended function; and
 - b) within twenty (20) business days of receipt of the annual inspection report, notify the administering authority in writing, of the recommendations of the inspection report and the actions being taken to ensure the integrity of each regulated structure.
- E25 A copy of the annual inspection report must be provided to the administering authority upon request and within ten (10) business days.

Design storage allowance

- E26 On 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the Design Storage Allowance (DSA) volume for the dam (or network of linked containment systems).
- E27 The holder must, as soon as possible and within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.
- E28 The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.

Performance review

- E29 The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.
- E30 The holder must take action to modify its water management or linked containment system so as to ensure that the regulated dam or linked containment system will perform in accordance with the requirements of this authority, for the subsequent November to May period.

Note: Action may include seeking the necessary approvals for physical modification of a regulated dam.

Transfer arrangements

- E31 The holder must provide a copy of any reports, documentation and certifications prepared under this authority, including but not limited to any Register of Regulated Structures, hazard assessment, design plan and other supporting documentation, to a new holder and the administering authority on transfer of this authority.

Regulated structures location and performance

- E32 Each regulated structure named in Column 1, of Schedule E - Table 1 (Location of Regulated Structures) must be wholly located within the control points noted in columns 2 and 3 of Schedule E - Table 1 (Location of Regulated Structures), below, for that structure.

Schedule E—Table 1 (Location of Regulated structures)

Name of Regulated Structure ¹	Co-ordinates GDA 94 MCA Zone 55	
	Easting	Northing
Pit and Portal	234468	8218660
	234461	8218674
	234491	8218748
	234512	8218697
Settling Dam	234138	8218216
	234116	8218248
	234262	8218302
	234268	8218268
Raw Water Dam 1	235052	8217970
	234952	8218217
	235244	8218213
	235249	8218061
Raw Water Dam 2	234639	8218522
	234559	8218583
	234617	8218609

	234676	8218559
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1. The 'name of the regulated structure' should refer to the name for example, process residue facility and decant dam.
2. A minimum of three control points is required to constrain the location of all activities associated with the regulated structure, Additional infrastructure which forms part of any regulated dam may include appurtenant works consisting of seepage collections systems, runoff diversion bunds, containment systems, pressure relief wells, decant and recycle water systems. Note that details on tailing discharge pipelines would be included in this table only if they have not been included in the design plan required in condition EI O.
3. TBA means to be provided to the administering authority by 1 July 2014.

E33 Each regulated dam named in column 1 of Schedule E—Table 2, must be consistent with the details noted in columns 2 through to and including 7 of Schedule E - Table 2, below, for that dam.

Schedule E—Table 2 (Basic Details of Regulated Dams)

Name of Regulated Structure ¹	Hazard Category	Surface area of dam at spillway (ha)	Max. volume of dam at spillway (m ³)	Max. depth of dam ² at spillway (m)	Spillway Level (mAHD)	Use of dam ³
Pit and Portal	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴
Settling Dam	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴
Raw Water Dam 1	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴
Raw Water Dam 2	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴	TBA ⁴

1. The name of the regulated dam should refer to the name of the dam, for example, process residue facility and decant dam and should be the same name used in Schedule E Table 1 (Location of Regulated Structures) for the dam.
2. For regulated dams which do not require a dam wall, input the maximum void depth, for example, where dams are formed by excavating below the land surface or backfilling a residual void.
3. The use or purpose of the regulated dam should outline the designed function, for example, 'the permanent containment of tailings resulting from the extraction of nickel, cobalt and other metals at the XYZ refinery'.
4. TBA means to be provided to the administering authority by 1 July 2014.

E34 Each regulated dam named in column 1 of Schedule E – Table 1, must meet the hydraulic performance criteria noted in columns 2 through to and including 4 of Schedule E - Table 3, below, for that dam.

Schedule E—Table 3 (Hydraulic Performance of Regulated Dams)

Name of Regulated Structure	Spillway Capacity AEP	Design Storage Allowance AEP	Mandatory Reporting Level AEP
Pit and Portal	TBA ¹	TBA ¹	TBA ¹
Settling Dam	TBA ¹	TBA ¹	TBA ¹
Raw Water Dam 1	TBA ¹	TBA ¹	TBA ¹
Raw Water Dam 2	TBA ¹	TBA ¹	TBA ¹

1. TBA means to be provided to the administering authority by 1 July 2014.

Transitional arrangements

- E35 Each regulated structure listed in Schedule E – Table 1 must within a period of five years (the transitional period) from the date this environmental authority takes effect, meet the performance requirements of conditions E34 and E35.
- E36 During the transitional period, for each declared regulated structure listed in condition E33, either:
- a) Certification must be provided, by a suitably qualified and experienced person, in the form set out in the *Manual for Assessing Hazard Categories and Hydraulic Performance of Dams*:
 - i. that the declared regulated structure is suitable for use as a regulated structure and can be transitioned to meet with either conditions E34 and E35 of this authority; and
 - ii. of any design plans for the modification of the declared regulated structure where modification is required to meet with either conditions E34 and E35 of this authority; or
 - b) The declared regulated structure must be decommissioned.

END OF CONDITIONS FOR SCHEDULE E

Schedule F - Definitions

Key terms and/or phrases used in this document are defined in this section. Applicants should note that where a term is not defined, the definition in the Environmental Protection Act 1994, its regulations or environmental protection policies must be used. If a word remains undefined it has its ordinary meaning.

"80th percentile of reference" must be determined in accordance with QWQG (2009) and ANZECC (2000) methodology. Reference sites are specified in Schedule C - Table 4 (Receiving Waters Monitoring Locations).

"administering authority" means:

- (a) for a matter, the administration and enforcement of which has been devolved to a local government under section 514 - the local government; or,
- (b) for another matter - the chief executive.

"Annual Exceedance Probability" or **"AEP"** the probability that at least one event in excess of a particular magnitude will occur in any given year.

"AHD" means **'Australian Height Datum'** which is the Australian national standard of geodetic datum for altitude measurements and is measured in meters (m). The level of 0.0 meters (m) AHD approximates the mean sea level (as previously measured for the period 1966-1968).

"ambient (or total) noise" at a place, means the level of noise at the place from all sources (near and far), measured as the Leq for an appropriate time interval.

"ANZECC (2000)" means the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000) published by the Australian and New Zealand Environment and Conservation Council and the Agriculture and Resource Management Council of Australia and New Zealand or any equivalent update/replacement guidelines.

"appropriately qualified person" means a person who has professional qualifications, training, skills and experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis on performance relative to the subject matter using the relevant protocols, standards, methods or literature.

"assessed" and **"assessment"** by a suitably qualified and experienced person in relation to a hazard assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

- (a) exactly what has been assessed and the precise nature of that determination;
- (b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;
- (c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and
- (d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

"associated works" in relation to a dam, means:

- (a) operations of any kind and all things constructed, erected or installed for that dam; and
- (b) any land used for those operations.

"authority" means environmental authority (mining activities) under the Environmental Protection Act 1994.

"certification", means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy "Certification by RPEQs (ID: 1.4 (2A)).

"certifying", **"certify"** or **"certified"** have a corresponding meaning as 'certification'.

"construction" or **"constructed"** in relation to a dam includes building a new dam and modifying or lifting an existing dam, but does not include investigations and testing necessary for the purpose of preparing a design plan.

"chief executive" means the chief executive of the Department of Environment and Heritage Protection or its successor.

"commercial place" means a place used as an office or for business or commercial purposes, other than a place within the boundaries of the operational land.

"dam" means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void. A dam does not mean a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container.

"dam crest volume" means the volume of material (liquids and/or solids) that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (e.g. via spillway).

"Design Storage Allowance" or **"DSA"** means an available volume, estimated in accordance with the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams published by the Department of Environment and Heritage Protection, that must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an annual exceedance probability (AEP) specified in that Manual.

"designer" for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

"dried process residue" means the thickened and filtered tailings that are produced as a result of processing ore.

"emergency action plan" means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to downstream communities and the implementation of protection measures. The plan must require dam owners to annually update contact details that are part of the plan, and to comprehensively review the plan at least every five years.

"environmental authority" means a licence or approval issued pursuant to the Environmental Protection Act 1994.

"flow event" in regards to receiving waters, means stream flow resulting in the flux of waters between permanent pools in drainage lines downstream of Raw Water Dam 1 and Settling Dam, as specified in Schedule A — Table 1 (Project Infrastructure Layout — Mine Area), and in Gum Creek and surrounding and connected waterways.

"flowable substance" means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids, fluids or solids, or a mixture that includes water and any other liquids, fluids or solids either in solution or suspension. "hazard" in relation to a dam as defined, means the potential for environmental harm resulting from the collapse or failure of the dam to perform its primary purpose of containing, diverting or controlling flowable substances.

"hazard category" means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams.

"hydraulic performance" means the capacity of a regulated dam to contain or safely pass flowable substances based on a probability (AEP) of performance failure specified for the relevant hazard category in the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams.

"in situ" in relation to water quality monitoring, means sampling a population variable (e.g., the concentration of an aquifer groundwater quality parameter) as close as possible to its origin. Unless otherwise specified under a condition of this environmental authority, in situ water quality parameters must include pH, electrical conductivity, dissolved oxygen (% saturation) and total suspended solids.

"infrastructure" means dams, roads and tracks, buildings and other structures built for the purpose of mining activities but does not include facilities required for the long-term management of mining impacts or the protection of potential resources. Such facilities include dams containing hazardous waste, waste rock dumps, voids, or ore stockpiles and buildings or other structures whose ownership can be transferred and which have a residual beneficial use for the next owner of the operational land or the background land owner.

"land" in the "land schedule" of this document means land excluding waters and the atmosphere.

"leachate" means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of at the operational land which contains soluble, suspended or miscible contaminants likely to have been derived from the said material.

"levee" means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of water or flowable substances at any other times.

"low hazard dam" means any dam that is not a high or significant hazard category as assessed using the "Manual for Assessing Hazard Categories and Hydraulic Performance of Dams; and

"Mandatory Reporting Level" or "MRL" means a warning and reporting level determined in accordance with the criteria in the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams published by the administering authority.

"major anions" in regards to water quality monitoring, includes at minimum the carbonate ion (CO_3^{2-}), bicarbonate ion (HCO_3^-) and chloride ion (Cl^-).

"major cations" in regards to water quality monitoring, includes at minimum the sodium ion (Na^+), potassium ion (K^+), magnesium ion (Mg^{2+}) and calcium ion (Ca^{2+}).

"modification" or **"modifying"** (see definition of "construction").

"mineral" means a substance which normally occurs naturally as part of the earth's crust or is dissolved or suspended in water within or upon the earth's crust and includes a substance which may be extracted from such a substance, and includes—

- a) clay if mined for use for its ceramic properties, kaolin and bentonite;
- b) magnetite;
- c) metal or metalloid compounds, including but not limited to compounds containing gold, copper, silver, lead, nickel, and zinc.
- d) foundry sand;
- e) hydrocarbons and other substances or matter occurring in association with shale or coal and necessarily mined, extracted, produced or released by or in connection with mining for shale or coal or for the purpose of enhancing the safety of current or future mining operations for coal or the extraction or production of mineral oil therefrom;
- f) limestone if mined for use for its chemical properties;
- g) marble;
- h) mineral oil or gas extracted or produced from shale or coal by in situ processes;
- i) peat;
- j) salt including brine;
- k) shale from which mineral oil may be extracted or produced;
- l) silica, including silica sand, if mined for use for its chemical properties;
- m) rock mined in block or slab form for building or monumental purposes; but does not include—
- n) living matter;
- o) petroleum within the meaning of the Petroleum Act 1923;
- p) soil, sand, gravel or rock (other than rock mined in block or slab form for building or monumental purposes) to be used or to be supplied for use as such, whether intact or in broken form;
- q) water.

"operational plan" for a dam means a document that amongst other things sets out procedures and criteria to be used for operating a dam during a particular time period, The operational plan as defined herein may form part of a plan of operations or plan otherwise required in legislation.

"prescribed native wildlife" for the purposes of this environmental authority, means native wildlife (including plants) listed as near threatened, vulnerable or endangered, under the Nature Conservation (Wildlife) Regulation 2006.

"QWQG (2009)" means the Queensland Water Quality Guidelines 2009 published by the Queensland Government or any equivalent update/replacement guidelines.

"receiving environment" in relation to an activity that causes or may cause environmental harm, means the part of the environment to which the harm is, or may be, caused. In relation to releases as defined in this environmental authority, the receiving environment can be further defined as the receiving waters of Gum Creek and connected or surrounding waterways.

"reference site" specified in Schedule C - Table 4 (Receiving Waters Monitoring Locations).

"regulated dam" means any dam in the significant or high hazard category as assessed using the Manual for Assessing Hazard Categories and Hydraulic Performance of Dams published by the administering authority.

"release" means the discharge of water (whether intentional or due to failure to prevent) to the receiving environment from any area, structure or feature located on a mining lease listed on this environmental authority.

"sensitive place" means;

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; or
- an educational institution; or
- a medical centre or hospital; or
- a protected area under the Nature Conservation Act 1992, the Marine Parks Act 1992 or a World Heritage Area; or
- a public park or gardens; or
- a place used as a workplace, an office or for business or commercial purposes which is not part of the mining activity and does not include employees accommodation or public roads.

"spotter/catcher" means a person who holds a rehabilitation permit in accordance with section 207 of the Nature Conservation (Wildlife Management) Regulation 2006 for the purpose of care and rehabilitation of a sick, injured or orphaned protected animal, or a protected animal whose habitat has been, or will be, destroyed by human activity or a natural disaster.

"stable" means land form dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (traffic ability), erosion resistance and geochemical stability with respect to seepage and contaminant generation.

"structure" means dam or levee.

"suitably qualified and experienced person" in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the Professional Engineers Act 2002, and has demonstrated competency and relevant experience:

- For regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design.
- For regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

"system design plan" means a plan that manages an integrated containment system that shares the required DSA volume across the integrated containment system.

"tolerable limits" means that a range of values could be accepted to achieve an overall environmental management objective (e.g. a range of settlement of a tailing cover could still meet the objective of draining the cap quickly, preventing pondage and limiting infiltration and percolation).

"watercourse" has the same meaning given in the Water Act 2000.

"**waters**" includes a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea) or any part thereof.

"**water table level**" means the top of the saturated zone of an unconfined aquifer (in m AHD), the standing water level.

"**wet season**" means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

END OF CONDITIONS FOR SCHEDULE F

Schedule G

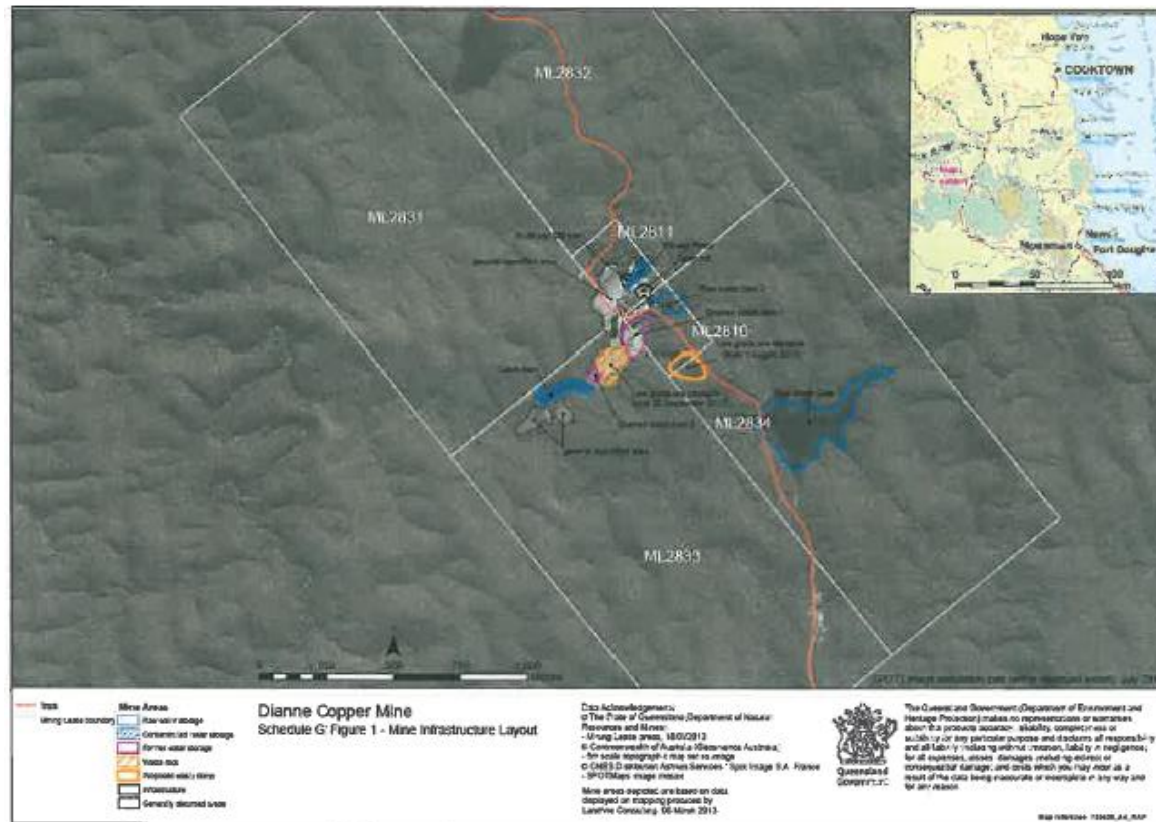


Figure 1. Mine Infrastructure Layout¹

1. Revised mine infrastructure layout figure to be provided to the administering authority by 1 February 2014

END OF CONDITIONS FOR SCHEDULE G

END OF ENVIRONMENTAL AUTHORITY